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## Learning for Sustainability Research into Action Briefings

### Briefing 3 The Impact of Outdoor Learning on attainment and behaviour in schools

#### Context

One of the defining characteristics of the Scottish concept of 'Learning for Sustainability' (LfS) is that it brings together 'traditional' approaches (Sustainable Development Education, Global Citizenship) with Outdoor Learning (OL - specifically immersive/sensitising experiences of the natural world). In a separate briefing we have examined the relationship between LfS and attainment<sup>1</sup>, demonstrating that the literature indicates 'a strong relationship between commitment to LfS/ESD and the metrics of academic success and indicators of a thriving academic community'. Outdoor learning is integral to the Scottish concept of LfS, and the schools visited in compiling the recent 'Conversations about Learning for Sustainability' report<sup>2</sup> made numerous references to the significance of outdoor learning to attainment. The present briefing considers a further body of literature that explores the impact of outdoor learning experiences on more general attainment and behavior in schools.

#### Outdoor learning: pedagogy and potential

Definitional aspects of outdoor learning are discussed in a separate Research into Action Briefing<sup>3</sup> and are summarised below<sup>4</sup>. Policy guidance, 'Curriculum for Excellence through Outdoor Learning'<sup>5</sup> published by Learning & Teaching Scotland, has outlined the broad curricular and developmental value of such experiences. Further, Recent Scottish studies<sup>6,7,8</sup> and other international research has identified that well structured outdoor learning:

- facilitates children's development in school grounds, local areas and on residential courses,
- supports learning in all aspects of the school curriculum from 3 to 18,
- provides opportunities for pupils to guide their own learning and develop critical thinking skills in ways elusive in the classroom,
- raises children's awareness of environmental and sustainability issues, resulting in understanding and promoting an ethic of care for our planet (directly linked with the concept of 'learning for sustainability')
- has direct health and wellbeing benefits.

This leads to high rates of 'enhancement of challenge, enjoyment, personalisation, relevance, breadth and progression' of learning<sup>9</sup>.

Despite this, the quality and quantity of outdoor learning continue to be very limited<sup>10</sup>, particularly within schools in disadvantaged areas, where students potentially could benefit the most and where the attainment gap is the greatest<sup>11</sup>.

## Outdoor learning, attainment and behaviour

Some elements of the above summary warrant further discussion, particularly with regard to the development of skills in critical and interdisciplinary thinking. This briefing draws upon research that informed the work of the Learning for Sustainability Ministerial Advisory Group as it developed the 'LFS concept'<sup>12</sup> and other subsequent research and reviews. In terms of context it is important to recognise that outdoor learning is generally poorly funded and has received little research attention. Whilst the specific aspects of outdoor learning pertinent to this briefing are not straightforward to research, and hence there are limited studies available, there are some indicative findings that are of value for practice and future research.

1. As indicated above there are positive findings (for example in mathematics and geography) that suggest improved subject-specific learning, but further that pupils enjoyed the opportunity to guide their own learning, both experientially and beyond the familiar classroom context. Teachers valued the opportunity for pupils to develop critical thinking skills, which can be overlooked in early secondary education<sup>13</sup>. Deployment of these skills alongside the affordances, attentional stimulation and indeed restorative potential of outdoor environments may be features in successful student learning. All of these are current research topics in several countries.
2. Whilst further research offers modest support for increased attainment in terms of specific subject areas such as mathematics, English, reading, geography, sciences and social studies, greater evidence exists to suggest that outdoor learning affords an integration of curricular content and global skill development. This aligns both with the general philosophy and purpose of Curriculum for Excellence<sup>14</sup>, and is central to understandings of complex interdisciplinary issues that characterise learning for sustainability.
3. The complex and fluid nature of outdoor learning experiences suggests that there may be greater value in taking a general, rather than a subject-specific view of potential learning outcomes. In other words, the subject-specific learning and content, whilst valuable, is considered subordinate to the potential for developing interdisciplinary understanding and skills through 'issue-based exploration', much as in recent Finnish education policy developments<sup>15</sup>.
4. That authentic and informal outdoor contexts provide rich opportunities for the development of peer and pupil-teacher relationships is a dominant feature of much outdoor learning research. It is also increasingly recognised that such connections improve behavior and are central to young peoples attachment and commitment to school and their academic career more generally<sup>16</sup>.
5. Outdoor learning experiences offer a valuable counter to the tendency of school curricula and assessment to favour a theory-based approach rather than practical work, and offer potential benefits of practical and consequential learning in a more appropriate location. This may have synergistic effects in relation to point 1 above.

**Report authors:** Prof Peter Higgins & Dr Beth Christie - University of Edinburgh

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**For further details:** Betsy King – Learning for Sustainability Scotland – [betsyking@ifsscotland.org](mailto:betsyking@ifsscotland.org)

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- <sup>1</sup> Christie, B. & Higgins, P. (2012). *Learning for Sustainability and attainment in schools*. Research into Action Briefings. Edinburgh: University of Edinburgh.
- <sup>2</sup> Education Scotland (2014). *Conversations about learning for sustainability: A series of case studies of schools and early years centres to mark the conclusion of the United Nations Decade of Education for Sustainable Development*. Glasgow: Education Scotland.
- <sup>2</sup> Laurie, R., Nonoyama-Tarumi, Y., McKeown, R. & Hopkins, C. (2015). *Contributions of Education for Sustainable Development (ESD) to Quality Education: A Synthesis of research*. An occasional report for UNESCO.
- <sup>3</sup> Christie, B. & Higgins, P. (2012). *The impact of 'Outdoor Learning' on 'Learning for Sustainability' in schools*. Research into Action Briefings. Edinburgh: University of Edinburgh.
- <sup>4</sup> The focus of outdoor learning is on three frequently integrated areas: 1) outdoor activities, 2) environmental education and 3) personal and social development. Increasingly the value of learning directly outside the classroom can be an effective 'every-day' experience in the school grounds or local area has been recognised and embedded in some school practice.
- <sup>5</sup> Learning and Teaching Scotland (2010). *Curriculum for Excellence through Outdoor Learning*. Glasgow: Learning and Teaching Scotland
- <sup>6</sup> Higgins, P. & Nicol, R. (2013). Outdoor Education. In T. Bryce & W. Humes, D. Gillies and A. Kennedy (Eds.), *Scottish education - fourth edition* (pp.620-627). Edinburgh: Edinburgh University Press.
- <sup>7</sup> Christie, B., Beames, S., Higgins, P. (2015). Culture, context and critical thinking: Scottish secondary school teachers' and pupils' experiences of outdoor learning. *British Educational Research Journal*.
- <sup>8</sup> Mannion, G., Mattu, L. & Wilson, M. (2015). *Teaching, learning, and play in the outdoors: a survey of school and pre-school provision in Scotland*. Scottish Natural Heritage Commissioned Report No. 779
- <sup>9</sup> Mannion, G., Mattu, L. & Wilson, M. (2015). *Teaching, learning, and play in the outdoors: a survey of school and pre-school provision in Scotland*. Scottish Natural Heritage Commissioned Report No. 779
- <sup>10</sup> <sup>10</sup> Higgins, P. & Nicol, R. (2013). Outdoor Education. In T. Bryce & W. Humes, D. Gillies and A. Kennedy (Eds.), *Scottish education - fourth edition* (pp. 620-627). Edinburgh: Edinburgh University Press.
- <sup>11</sup> Mannion, G., Mattu, L. & Wilson, M. (2015). *Teaching, learning, and play in the outdoors: a survey of school and pre-school provision in Scotland*. Scottish Natural Heritage Commissioned Report No. 779
- <sup>12</sup> Christie, B. & Higgins, P. (2012). *The impact of outdoor learning experiences on attainment and behaviour: a brief review of literature*. Forestry Commission Scotland/University of Edinburgh. Forestry Commission Report 11/2012. Study funded by the Forestry Commission Scotland.
- <sup>13</sup> Christie, B., Beames, S., Higgins, P. (2015). Culture, context and critical thinking: Scottish secondary school teachers' and pupils' experiences of outdoor learning. *British Educational Research Journal*.
- <sup>14</sup> Scottish Government (2004). *Curriculum for Excellence*. Available online at: <http://www.scotland.gov.uk/Publications/2004/11/20178/45862>
- <sup>15</sup> Finland schools: Subjects scrapped and replaced with 'topics' as country reforms its education system <http://www.independent.co.uk/news/world/europe/finland-schools-subjects-are-out-and-topics-are-in-as-country-reforms-its-education-system-10123911.html>
- <sup>16</sup> Christie, B. & Higgins, P. (2012). *Learning for Sustainability and attainment in schools*. Research into Action Briefings. Edinburgh: University of Edinburgh.